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**From:** Garland, Edward [Edward.Garland@hdrinc.com]  
**Sent:** 7/10/2018 6:55:37 PM  
**To:** Salkie, Diane [Salkie.Diane@epa.gov]  
**Subject:** RE: Bathymetry

I'm glad they spoke. It is probably better if they speak directly anyway.

Edward J. Garland, P.E.  
D 201.335-9364 M 201.280-9742

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**From:** Salkie, Diane [mailto:Salkie.Diane@epa.gov]  
**Sent:** Tuesday, July 10, 2018 2:45 PM  
**To:** Garland, Edward <Edward.Garland@hdrinc.com>  
**Subject:** RE: Bathymetry

I know Rob had spoken with Tetra Tech about LiDAR and issues with LiDAR, but I don't know how far they got or if they have any documentation.

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**From:** Garland, Edward [mailto:Edward.Garland@hdrinc.com]  
**Sent:** Tuesday, July 10, 2018 2:42 PM  
**To:** Salkie, Diane <Salkie.Diane@epa.gov>  
**Subject:** RE: Bathymetry

Diane,

Do you know if the CPG got information about the LiDAR from the lower 8-mile team? After the biweekly call yesterday, I sent an email to Gary Braun (Tetra Tech) to try to get info that would help the CPG plan their survey. When I saw that Rob Law included LiDAR in his email to you, I hoped they had already gotten info from the lower 8-mile team.

Ed

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**From:** Salkie, Diane [mailto:Salkie.Diane@epa.gov]  
**Sent:** Tuesday, July 10, 2018 1:12 PM  
**To:** Scott Kirchner <kirchnersf@cdmsmith.com>; Garland, Edward <Edward.Garland@hdrinc.com>; Wands, James <James.Wands@hdrinc.com>; Frantz, Aaron <FrantzAR@cdmsmith.com>; Franklin, Elizabeth A CIV USARMY CENWK (US) <Elizabeth.A.Franklin@usace.army.mil>; Sivak, Michael <Sivak.Michael@epa.gov>; Roberts, Keegan <robertsk@cdmsmith.com>  
**Subject:** RE: Bathymetry

That sounds like a good plan. I am free before 10.

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**From:** Kirchner, Scott [mailto:KirchnerSF@cdmsmith.com]  
**Sent:** Tuesday, July 10, 2018 1:11 PM  
**To:** Salkie, Diane <Salkie.Diane@epa.gov>; Garland, Edward <Edward.Garland@hdrinc.com>; Wands, James

<James.Wands@hdrinc.com>; Frantz, Aaron <FrantzAR@cdmsmith.com>; Franklin, Elizabeth A CIV USARMY CENWK (US) <Elizabeth.A.Franklin@usace.army.mil>; Sivak, Michael <Sivak.Michael@epa.gov>; Roberts, Keegan <robertsk@cdmsmith.com>

**Subject:** RE: Bathymetry

Diane, do you want to have a quick call tomorrow to touch on this and the other CAG questions?

Keegan is in the field but it looks like Aaron may be available in the morning.

Not sure if Beth, Ed and/or James are available though.

**Scott F. Kirchner**

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**From:** Salkie, Diane <Salkie.Diane@epa.gov>

**Sent:** Tuesday, July 10, 2018 12:50 PM

**To:** Garland, Edward <Edward.Garland@hdrinc.com>; Kirchner, Scott <KirchnerSF@cdmsmith.com>; Wands, James <James.Wands@hdrinc.com>; Frantz, Aaron <FrantzAR@cdmsmith.com>; Franklin, Elizabeth A CIV USARMY CENWK (US) <Elizabeth.A.Franklin@usace.army.mil>; Sivak, Michael <Sivak.Michael@epa.gov>; Roberts, Keegan <robertsk@cdmsmith.com>

**Subject:** FW: Bathymetry

Please take a quick look at this and let me know if you have any thoughts. This is in reference to the CAG's questions about moving forward with CSTAG's request to start sampling soon.

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**From:** Robert Law [mailto:rlaw@demaximis.com]

**Sent:** Tuesday, July 10, 2018 12:03 PM

**To:** Salkie, Diane <Salkie.Diane@epa.gov>

**Cc:** Potter Willard <otto@demaximis.com>

**Subject:** Bathymetry

Diane:

Here is the CPG's current thinking. We should have a call soon to develop the scope for the Bathymetry survey so we can begin working on a QAPP.

#### **Bathymetry Survey - 2018 - Following Direction Letter**

1. Multibeam with Single Beam in shoals
2. LIDAR for Shoals
3. Side Scan Sonar - define surface sediment texture - coarse vs fine

#### **Other Data - TBD - 2019**

1. Flow and velocity data to support High Density Hydrodynamic Model Development
2. Turbidity Monitoring (w/ TSS sampling) at Dundee Dam to determine solids loading

Thanks

R/

Rob

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